"THE PROGRESS OF THE CENTURY," BY FAMOUS SPECIALISTS.

DEVELOPMENTS IN THE SCIENCE OF WARFARE BY SIR CHARLES DILKE.

THIS is the tenth in the series of special articles on the world's development in the past hundred years. It considers modern military affairs, the peace strength of armies, and the significant changes that have been inaugurated. The author has written for the lay reader. It will be followed by others, fourteen in all, which will review the various departments of literature, naval ships, and religion.

SIR CHARLES DILKE.

One of the foremost of English public men is Sir Charles Wentworth Dilke, formerly Undersecretary of State for Foreign Affairs. He is informed on the politics of Europe, and on the condition of the armies, whose existence has much to do with political conditions. He is the author of "Greater Britain," "Present Position of European Politics" "The British Army," "Problems of Great Britain," "Imperial Defense," with Spenser Wilkinson, and "The British Empire."

Aside from his special knowledge of military affairs in Europe and America, he has been a student of the time. He had problems to face when he was Undersecretary of State for Foreign Affairs, and he faced them bravely. He is a typical Englishman in many respects. He has a country place, a shooting place, and a house in London. For recreation he takes to rapier fencing, light-pair rowing, best-boat sculling and riding, the amusements of many of his compatriots.

He was born in 1843, and is the second Baronet, the title having been conferred on his father in 1862. Sir Charles was educated at Trinity Hall, Cambridge, and was a Scholar of the Hall. He was Senior Legalist, or Head of Law Tripos, in 1865, a position of distinction in the university. After leaving Trinity, he was a barrister in Middle Temple, and was a member of Parliament from Chelsea from 1868 to 1886. From 1880 to 1882 Sir Charles was chairman of the Royal Commission for negotiations with France, and he was chairman of the Royal Commission for Housing the Working Class, in 1884 and 1885. His second wife is the famous Lady Dilke, author, art critic and active philanthropist.

SUMMARY OF SIR CHARLES DILKE'S ARTICLE.

When it comes to a consideration of the science of warfare, the views of Sir Charles Dilke must be consulted. In the following article he has paid his compliments to the bungling methods of the army of Great Britain, and exposed its most important weaknesses.

Fundamental Conditions.

With a firm hand he has swept the horizon clear of every outline that is likely to interfere with a good view of the fundamental conditions of military affairs, and then he has brought out these latter objects into strong relief.

For the lay reader's special pleasure it must be remarked that he is not technical. He has viewed the matter in a plain, common-sense sort of a way, a very effective method, and one that brings conviction.

Armies of Germany and France.

Sir Charles tells why he has taken the armies of France and Germany as his standards of measurement. He looks over the struggle of weapons, and the differences in the practice of military tactics because of changes in weapons. He talks about the peace strength of modern armies, and discusses the systems of the various European countries.

The Army's Stomach.

According to Sir Charles, the possibility, or, more properly speaking, the necessity, of the rapid mobilization of armies, is the great change of the century. In this connection the equipment of the army is of paramount importance. Napoleon's historic remark that an army "travels on its stomach" will have an especial significance. The armies of the future will "fight on their stomachs." Sir Charles calls attention to the tendency of massing enormous bodies of men, and continuing the battle over several days. And here comes in the difficulty of feeding this large body of men.

As a last word, Sir Charles declares that enormous military organizations are not an unmixed evil, and explains why.

Warfare.

The editor has asked me to write upon the military progress of the century, but it is doubtful how far, even if as civilians we get over our natural dislike of talking military change as "progress," there has been any considerable advance in the larger aspects of military science within the century. The genius of Bonaparte, working upon the foundations laid by Frederick the Great, established a century ago principles which are essentially applicable to the military matters of the present day; and although the scientific developments of artillery and musketry have affected the dispositions of battlefields, the essential principles of the art of preparation for war and of strategy stand where they stood before.

Scharnhorst was the Prussian officer who began to reduce the Napoleonic military system to rules applicable to the use of German armies. Under Bonaparte the whole management of the army was too often concentrated in the hands of the man of genius, and the actual method of Napoleon had the defect that, failing the man of genius at the head of the army, it broke down. The main change made by the Germans, who followed Scharnhorst, in the course of the century has been to codify the Napoleonic system so that it was possible to more generally decentralize in practice without impairing its essence. They have also established a division of its supply department (under a Minister of War) from the "brain of the army," as Mr. Spenser Wilkinson has well called it, which manages the preparation for the strategy of war and the strategy itself. These so-called Prussian principles of decentralization and "initiative" are, however, not new and not Prussian, and may be discovered in the conversations of Napoleon Bonaparte. The French in 1870 had forgotten his teaching and the Germans had retained it. It is, nevertheless, the case that the number of men placed in the field by the military powers having increased, the intelligent initiative of corps commanders and even of Generals commanding divisions has become the more essential. It is impossible that the great general staff can give orders in advance which will cover the responsibility of all the inferior Generals, and brains have to be added in all ranks to obedience. The commander-in-chief in the field cannot with advantage drown himself in details, and he can only provide in his orders an outline sketch which his subordinates in various parts of the field of operations have to fill in. The "initiative of subordinates" is but the natural division of labor.

If the editor has called on me, a civilian student of military politics rather than on a military expert, it must be because he desires to bring largely into the account the changes in military organization which on the Continent of Europe have made it permanently national, and which in the United States made it temporarily national during the Civil War, and would make it so again in the event of any fresh struggle on a great scale in which the North American Continent might become involved.

Although the "Armed Nation" has replaced in France, Germany, Switzerland, Austria-Hungary, Italy, Roumania and Bulgaria the smaller professional armies of the Eighteenth Century, the popular belief that the numerical strength of field armies has enormously increased is not so completely well founded as at first sight might be supposed. It is true that each nation can put into the entire field of warfare larger numbers than that nation could put into the field a century ago. But it is still not beyond the bounds of possibility that in certain cases small armies may produce results as remarkable as those which attended British operations in the Peninsula in the early part of the Nineteenth Century; and, on the other hand, although there will, upon the whole, in future Continental wars be larger armies in the field, no one General is likely personally to handle or to place upon a field of battle a larger army than that with which Napoleon traversed Europe before he invaded Russia.

Theory of the "Armed Nation."

The principles of pure military science as set forth in books have not been greatly changed during the Nineteenth Century. The Prussian Clausewitz only explained for us the doctrines of Bonaparte; and the latest writers—such as the Frenchmen Derrecagaix and Lewal—only continue Clausewitz. The theory of the armed nation has received extension, but after all the Prussian system in its essentials dates from Jena, and the steps by which it has produced the admirable existing armies of France, Austria and Roumania have been but slow.

The United States stand apart. Their resources are so fabulously great that they and they alone are able to wait for war before making war preparations. No Power will attack the United States. All Powers will submit to many things and yield many strong points rather than fight the United States. The only territorial neighbors of the Republic are not only not in a position to enter into military rivalry with her on the American Continent, but are not advancing their military establishments with the growth of their or of her population. They are of themselves not only unable to attack, but equally unable in the long run effectively to resist her.

The whole question, then, unfortunately for us Europeans is a European question, and I need make but little reference to happier lands across the greater seas.

In Europe the United Kingdom stands absolutely apart. The existence of the British Empire depends less upon our armies than on our fleet. India is garrisoned by a small but costly army, sufficient for present needs but insufficient to meet their probable growth. The home army, kept mainly in England and Ireland (and in Ireland now only because life is cheap in Ireland and the country healthy and well fitted for the drill and discipline of troops), has been chiefly a nursery for the white army in India, and will be for that in South Africa. The expeditions which the country is obliged to send from time to time across the seas have but a domestic interest, and are unimportant when viewed from a world-wide military standpoint. In the event of war the attention of the country would be concentrated upon her fleets, with a view to retain that command of the sea without which her old-fashioned army would be useless.

Belgium has an old-fashioned army of another type. A small force of conscripts is "drawn," and the men are allowed to find substitutes for money. But Belgium and the other smaller Powers, except Switzerland, Roumania and Bulgaria, may be neglected in our survey. Switzerland has developed an excellent army of a special local type; a cheap, but highly efficient militia, the most interesting point about which is that, while field artillery is supposed to be difficult of creation and only to be obtained upon a costly and regular system, Switzerland produces an excellent field artillery upon a militia footing. The garrison artillery militia of Great Britain have longer training than the field artillery of the Swiss Federation, but the results of the training are very different. Similarly, while cavalry is supposed to be in the same position as artillery in these matters, Hungary produces a good cavalry upon a militia system. It is, however, to the native army in India that we have to turn if we want to see what long service cavalry in past centuries used to be, for in these days of shorter service cavalry at least has suffered a decline, and, so far from cavalry, on the whole, presenting us with a picture of military progress in the century, the cavalry of the present day is not to be compared with the cavalry of the past. Roumania and Bulgaria, although small countries, have remarkable armies of the most modern type, of great strength when considered proportionately to their populations, but these need not come under our examination, because substantially they are on the Prussian plan.

Cavalry Has Declined in These Days.

Russia differs from Germany, France and Austria in having an immense peace army. Her peace army is indeed as large as that of the whole of the Triple Alliance, and the enormous distances of Russia and the difficulties of mobilization and concentration force her into the retention and development of a system which is now peculiar to herself. The armies of Russia resemble more closely (although on a far larger scale) the old armies of the time before the changes which followed 1866 than the French, German and Austrian armies of to-day. Italy is decreasing her army and has been driven by her financial straits to completely spoil a system which was never good except on paper. It is doubtful whether now in a sudden war the Italians could put into the field any thoroughly good troops, except their Alpine battalions, which are equal to those of the French. The Austrian system does not differ sufficiently from that of Germany and of France to be worthy special note, although it may be said in passing that the Austrian Army is now considered by competent observers to be excellent. We may take as our type of the armies of to-day those of Germany and of France. These armies are also normal as regards their cost. Great Britain having no conscription, and being in the habit of paying dearly for all services, is extravagant in her military expenditure for the results obtained. Switzerland and Russia, with their different systems, and for different reasons, obtain their armies very cheaply; and if we wish to know the cost of the modern military system it is to Germany and to France that we should turn.

Modern Military System in Germany and France.

Those who would study the French or Germany Army for themselves will find a large literature on the subject. The principles which govern the establishment of an armed nation upon the modern Prussian scale, improved after the experiences of 1866 and again after those of 1870, are explained in the work of Von der Goltz, "The Nation in Arms." Those who would follow these principles into their detailed application, and see how the armies are divided between and nourished and supplied from the military districts of one of the great countries, will find the facts set forth in such publications as the illustrated "Annual of the French Army," published each year by Plon, Nourrit et Cie., or in the official handbooks published by the Librairie Militaire Baudoin.

In the time of Bonaparte and even in the time of the Second Empire in France army corps were of varying strength, and there was no certain knowledge on the part of administrators less admirable than the first Napoleon himself of the exact numbers of men who could be placed in the field. In 1870 Louis Napoleon was wholly misinformed as to his own strength and as to that of his opponents, which were, however, accurately known to Von Moltke. In these days such confusions and difficulties are impossible. The army corps of the great military Powers are of equal strength and would be equally reenforced in the extraordinarily rapid mobilization which would immediately precede and immediately follow a declaration of war. The chief changes in the century have been a greater exactitude in these respects, a general increase of numbers (especially a great increase in the strength of field artillery), and in these last years a grouping of the army corps into armies, which exist in Germany, France and Russia even in time of peace with all their Generals and staff named ready for war. In each of the great military countries the army is guided by the counsel of a general staff. Around the chief of the staff and the Minister of War are the "Generals of armies," and in France a potential generalissimo (who on the outbreak of war would often be superseded by another General in the actual command). In the case of Germany the command would now be exercised by the young Emperor. In the case of France it would be exercised by the generalissimo with the chief of the staff as his "Berthier" or Major General. Enormously important duties in the case of armies so unwieldly as the entire forces of the first line and of the second line in Germany or France and of the first line in Russia would be exercised by the "Generals of armies." These Generals in time of peace are called "Inspectors of Armies" in France, Germany and Austria, and they inspect groups of army corps which would be united in war to form the armies which these Generals would actually command. These Generals also form the council of war, or principal promotion board and committee of advice for the generalissimo and chief of the staff. In Germany and in Austria-Hungary the German Emperor and the Emperor-King respectively are virtual general inspectors-in-chief of the whole army, but in France and in Russia there is less unity of command. The Minister of War in Russia, in Germany and in France is intended to be at the head of the supplies of the army in time of war, directing the administration from the capital and not taking his place in the field.

When the Prussian Plan Was Adopted.

The Prussian system, as far as the men are concerned, was adopted after the disasters of Prussia early in the century, in order to pass great numbers of men through the ranks without attracting attention by keeping up a large peace army. The system is now maintained by Germany, Austria and France for a different reason. Such Powers desire to have an enormous force for war, but, for budgetary reasons, to keep with the flag in time of peace the smallest force which is consistent with training the men sufficiently to enable them, upon mobilization, to be brought back to their regiments as real soldiers. It is these considerations which have induced the younger and more thoughtful of the Prussian Generals to force on Germany a reduction of the period of infantry service to two years. The army in time of peace becomes a mere training school for war, and the service is made as short as possible, given the necessity of turning out a man who, for some years will continue to have the traditions of a soldier. It is a question whether something has not been sacrificed, in France at all events, to uniformity. A longer period of training is undoubtedly necessary to make an efficient cavalry soldier than is necessary to make an efficient infantry private; and a man who has served about two and a half years only in a cavalry regiment cannot, in the majority of cases, be brought back into the cavalry after he has returned to civil life. Cavalry, in the modern armies, is likely to be a diminishing force as war goes on. The armies will enter upon war with a number of infantry, which can be kept up, the losses of war being supplied by reserve men as good as the men of the first line; but each army will enter upon war with a force of cavalry which will be rapidly destroyed if it is much used, and which will not be replaced in the same manner. The reserve cavalry, of which the French press boasts, is a paper force, and the pretended mobilization of two of its regiments a farce. The French would take the field with the cavalry of the first line only, seventy-nine regiments of 500 horses (all over 6 years old), or less than half the 84,000 cavalry with which Napoleon marched in 1812. The same thing might possibly be said of artillery as is said of cavalry but for the fact that Switzerland tells a different story as to the possibility of rapidly training artillerymen with a considerable measure of success. The French improvised artillery of the latter part of the war of 1870 were also a creditable force, while it was discovered to be impossible to create a cavalry.

The efficiency of the reserves in France, Germany and Austria is tested by the calling out of large portions of them every year for training, and they are found, as far as the infantry go, thoroughly competent for the work of war. The difficulties as regards cavalry are so obvious that it is becoming more and more recognised by Germany and by France that the cavalry will have to take the field as they stand in peace, and that their reserve men will have to be kept back with a view to the selection among them of those who are fit to serve as cavalry and the relegation of the greater number to the train and other services where ability to ride and manage horses is more necessary than the smartness of a good cavalryman. France and Germany nominally look forward to the creation of two kinds of armies in time of war, one of the first line to take the field at once, and the other to guard the communications and garrison and support the fortresses, but in fact it is the intention of these Powers to divide their armies into three—a field army of the first line, a field army of the second line, out of which fresh army corps will at once be created on the outbreak of war, and, thirdly, a territorial army for communications and for fortress purposes and as a last reserve. It is a portion of the French and German system that each army corps of the first line—and the same would be the case in war with the second line corps—has its separate organization of ammunition train and baggage train and draws as largely as possibly its supplies from its own territorial district.

The peace strength of the great modern armies is for France and Germany about 500,000 men each, and the war strength between 4,000,000 and 5,000,000 men each. The peace strength of Russia is now over 900,000 men. Of the war armies the training is not uniformly complete, but there are in Germany, France, Austria and Roumania sufficient reserves of clothing and rifles to equip the war armies of those Powers for the field.

England's Poor Equipment in Fighting Strength.

The cost of the system of a modern army is very much less than that of the old-fashioned armies. The United Kingdom spent till lately (including loan money) about £18,000,000 upon her army. India rarely less than £14,000,000 and an average of £15,000,000, and the British Empire, outside the United Kingdom and India, £2,000,000, or an average of £35,000,000 in all upon land forces. The expenditure of the United Kingdom upon land forces has been permanently increased to an enormous extent by the South African war and cannot now be estimated. The expenditure of France and Germany upon land forces is greatly less; and of Russia, large as is her peace army, less again. But France and Germany in the event of war can immediately each of them place millions of armed men in the field in proper army formation and with adequate command, whereas the United Kingdom can place a doubtful three corps in the field in India with great difficulty, and in the true sense of the word no organized force at all at home without an incredible amount of reorganization and waste of time after the declaration of war. It is contended by the authorities responsible for the British Army that two army corps could be placed in the field at home, and elaborate paper arrangements exist for this purpose; but the facts are as I state them, and not as they are professed to be. It is pretended that three corps of Regulars were dispatched to South Africa. But the cavalry and artillery were in fact created by lavish expenditure a long time after the war had begun and after disasters caused by their nonexistence.

Centralized as is the administrative system of France and Germany in everything except war, the necessities of modern warfare have forced upon the Governments of those countries a large amount of decentralization as concerns military matters, and the less efficient military machines of the United Kingdom and of Russia are far more centralized than are the more efficient machines of Germany and of France. The army corps districts have in the latter countries so much autonomy as to recall to the political student the Federal organization of the United States rather than the Government of a highly centralized modern power. As soon, however, as war breaks out, the military States of time of peace would be grouped, and the four or five groups known as "armies," also, of course, theoretically, brought together under the directing eye of the generalissimo. In the case, at all events, of Germany, unity of direction is perfectly combined with decentralization and individual initiative.

Rapidity of Mobilization the Great Change of the Century.

The mode in which a modern army on the anticipation of war prepares itself for the field is extraordinarily rapid in point of time, as compared with the mode found necessary in the time of Napoleon Bonaparte; and it is this rapidity of mobilization and concentration which strikes the observer as the greatest change or progress of the century in connection with armies But it is a mere consequence of railroads and telegraphs, and is only the application to military purposes of those increased facilities of locomotion which have played so great a part in the progress of the century. Mobilization is, of course, the union at points fixed beforehand of the men of the reserves, who bring the army up to its war footing, and the clothing and equipment of these men and the distribution to the mobilized regiments of their full materials of war. The cavalry and horse artillery kept upon the frontier are now in a condition of permanent readiness in the principal military countries, as they would be used to cover the mobilization of the remainder of the army. The moment mobilization is accomplished concentration takes place—on the frontier in the case of the principal Powers near the line of concentration are forts, which play a greater part in the French scheme of defence than they do in the German. The French in the days of their weakness, after 1870, both constructed a line of intrenched camps and built a kind of wall of China along the most exposed portion of their eastern frontier; whereas, the Germans are prepared to rely upon their field armies, supported by a few immense fortresses, such as those (on their western frontier) of Metz and Strasburg. The French keep in front of their fortresses at Nancy a strong division, which is virtually always on a war footing, and both in France and Germany the frontier corps are at a higher peace strength than those of the interior, and are meant to take the field at once, so as to help the cavalry and horse artillery to protect the mobilization and concentration of the remainder, and, if possible, to disturb the mobilization and concentration of the foe. Those who would study modern armies for themselves should visit Nancy and Metz, but should not neglect the Swiss annual maneuvers.

The work of the recruit of Germany and of France, during his two years or nearly three years' training as the case may be, is as hard as any human work; and the populations of the continental countries submit, not on the whole unwillingly, from patriotic motives to a slavery of which the more fortunate inhabitants of the United Kingdom and of the United States have no conception. The British or the Belgian paid recruit would mutiny if forced to work as works the virtually unpaid and ill-fed recruit of Russia, Germany, Austria and France. The enormous loss to many industries which is caused by the withdrawal of the men at the age of 20, just when they are most apt to become skilled workmen, is, in the opinion of some Germans, compensated for by the habit of discipline and the moral tone of stiffness and endurance which is communicated to the soldier for the rest of his life. This is perhaps more true of the German character than it is of the inhabitants of the other countries; and in France, at least, the soldier training of the entire population is a heavy drawback to industrial and to intellectual life. There are, however, as will be seen in the concluding passage of this article, other considerations to be taken into account, some of which tell the other way.

The one successful exception to the prevailing military system of the day is to be found in Switzerland, which has a very cheap army of the militia type, but one which is, nevertheless, pronounced efficient by the best judges. The mobilization of Switzerland in 1870 was more rapid than that of either Germany or France, and, great as are the strides that both France and Germany have made in rapidity of organization and as regards numbers since 1870, the Swiss also have reorganized their mobilization system since that time and are still able at a much less proportional cost to place in the field at least as large a proportional force as Germany, and this force is believed to be efficient, although not largely provided with cavalry.

Artillery Development in Battlefields of the Future.

The greatest change in the battlefields of the future as compared with those of a few years ago will be found in the development and increased strength of the artillery. A modern army when it takes up a position has miles of front almost entirely occupied with guns, and the guns have to fire over the infantry, because there is no room for such numbers of guns to be used in any other way. The attacking side (if both, indeed, in one form or another, do not attempt attack) will be chiefly occupied in obtaining positions on which to place its guns, and the repeating rifle itself, deadly as is its fire, cannot contend at ranges over 1,000 yards, unless the riflemen are heavily intrenched, with the improved shrapnel fire of modern guns. The early engagements of a war will indeed be engagements of cavalry massed upon the frontier on the second day of mobilization, so rapid will the opening of war in the future be. This cavalry will be accompanied by horse artillery and followed by light infantry, constantly practised in rapid marching in time of peace, or by mounted infantry. But the great battlefields of the later weeks will be battlefields above all of artillery. The numbers engaged will be so great that the heaviest of all the responsibilities of the Generals will be the feeding of their troops during the battles prolonged during several days, which will probably occur, and it is doubtful how far the old Generals (often grown unwieldy in time of peace) will be able to stand the daily and nightly strain of war. Jomini has said that when both sides are equally strong in numbers, in courage and in many other elements of force, the great tragedy of Borodino is the typical battle. Lewal has pointed out that in the battles of the future such equality must be expected: "The battle will begin on the outbreak of war in the operations of the frontier regiments. The great masses as they come to the field will pour into a fight already raging. The battle will be immense and prolonged." Promotion will probably be rapid among the Generals, owing to incompetence and retirement, and certainly among other officers owing to their exposure in these days of smokeless powder, when good shots can pick off officers in a manner unknown in wars which have hitherto occurred. Whether it will be possible to get armies to advance under heavy fire after the officers have been killed is doubtful, when we remember that modern armies consist of the whole population, cowards and brave men alike, and that regimental cohesion is weakened by the sudden infusion of an overwhelming proportion of reserve men at the last moment.

On the other hand, in the German Army the reserve men will be fewer in the first line than in the French, and the regimental system more available in the field, while on the French side the greater military aptitude of the French race may perhaps be counted upon to remedy the comparative defect. The Prussians make up for the inferior military aptitude of the German people by patriotism, discipline and the conferring of honor and of civil employment in after life on all who do their duty in war. They also provide more effectively than do the French against incapacity in high place. Above all, however, we should attach importance to the wisdom of successive Kings of Prussia in treating the Prussian Army as an almost sacred institution and in constantly working in time of peace to make it and keep it a perfect instrument of war.

The weakest point, relatively speaking, in the French organization, and the strongest point, relatively speaking, in the German, is the officering of the second and third line. The one-year-volunteer system gives the Germans excellent "territorial" officers, while the French have been forced virtually to abolish it as impossible of successful application in a country so jealous of privilege as in modern France. The territorial infantry regiments of France would be excellent for the defence of fortresses, but would for field purposes be inferior to that part of the Prussian landwehr which would remain over after the completion of the reserve corps. The reserve cavalry regiments of France have been created in order to provide promotion and sinecure appointments and would not produce a cavalry fit for true cavalry service in the field. It would carry us beyond the proper limits of this article to explain how it is that the French could create a field artillery of the second line in time of war which would probably be superior to that of Germany. This forms a set-off against some other inferiority of the French.

The newest point in the development of modern armies is the recent separation in the German Army of the cavalry intended for patrol duties from the cavalry intended for fighting in the field. We have had to face the same problem in South Africa, but this condition of our war was peculiar.

The Struggle of Weapons.

It has been said that the history of warfare is the history of the struggle among weapons, and that each change in tactics and even in strategy has come from scientific change affecting weapons. In the century we have seen the change from the smooth bore to the rifle and from the ordinary to the repeating rifle. We have seen the modifications of artillery, which are beginning to give an application of the quick-firing principle to field artillery and the use of high explosive shells, likely to affect by their explosion even those who are near the bursting shell and who are not struck by its fragments. Smokeless powder has altered the look of battles and has reduced their noise. It provides excuse for the incompetent. It would be easy, however, to exaggerate the importance of these changes as regards tactics, and still more with regard to strategy, while with tactics we are not here concerned. The great Continental military nations have hitherto not allowed themselves to be much affected by the changes in the weapons, and many of the modern fads which are adopted in small armies are condemned by the leaders of these great forces. The British machine guns, for example, like British mounted infantry, are generally regarded on the Continent as a fancy of our own. All nations have their military fads, except, perhaps, the severely practical Germans. Russia has its dragoon organization, from which it is receding; America has her dynamite gun; the French have their submarine torpedo boats. Our machine guns are not thought much more of by most Prussians than the steam gun of 1844, ridiculed by Dickens in "Martin Chuzzlewit." If great change was to have been made in the art of war by modern weapons, one would have thought that the first things to disappear would be all vestige of protective armor and the use of cavalry in the field. Yet protective armor has been recently restored to as large a proportion of many armies as used it in the wars of the beginning of the century, and the use of cavalry in the field is defended as still possible by all the highest authorities on the Continent. My own opinion on such matters is that of a layman and should be worthless, but it agrees with that of several distinguished military writers. I confess that I doubt whether in future wars between good armies, such as those of France and Germany, it will be possible to employ cavalry on the field of battle, and I go so far as to think that the direct offensive, still believed in by the Prussians, will be found to have become too costly to be possible. Our South African experience is not, however, regarded by Continental authorities as conclusive.

The author of "Ironclads in Action," Mr. Wilson, who has made a very thorough study of the future of naval war, has pointed out with great force the most striking of difficulties of war in the future as caused by the enormous concentration of forces in a particular tract of country. The result of that concentration must be great difficulties about supply, prolonged battles of an indecisive kind leading to exposure, absence of sleep and to conditions which would form the severest strain for professional men of war, while those who will now be subject to them will be the ordinary population, not very specially warriors, except so far as patriotism may in some cases make up as regards courage and endurance for absence of military tradition. The vast number of wounded will be exposed for longer periods than was the case in many of the earlier wars; but when we remember Leipsic and Dresden and the retreat from Moscow it is again easy to see that the change is rather in the direction of generalization of conditions, which were formerly exceptional, than a change to conditions wholly without precedent.

Enormous Military Organization Not an Unmixed Evil.

I have all through this article written of Germany and France as the modern military countries to be taken as a standard in all comparisons. The French have imitated the Germans very closely since the war of 1870. But, although imitation is generally feeble, it must always be borne in mind that the French people have greater military aptitude than the German, and that unless beaten at the beginning of a war they are always in the highest degree formidable. The perfection of system is to be found in Germany, and the peculiarities of the German system are the combination of enlightened patriotism in all its individuality with iron discipline. The system is so strong that unless well managed it would crush out individual responsibility; but the system itself encourages this individual responsibility all down the gradations of the army to the humblest noncommissioned officer and even to the detached private. The universality of promotion by a certain high standard of merit and the absence of jobbery are more thoroughly obtained in Germany than in any other army, and Lord Wolseley's criticisms on the 1898 maneuvers of our own army, criticisms renewed in 1900, in which he told us that no one had done well in the field, and that this proved that no one could have done his duty during the past year, would be impossible in Germany, and must have shocked military opinion throughout that country.

It is not unusual to assume that the enormous military establishments of the Continent of Europe are an almost unmixed evil. But this may perhaps be disputed on two grounds. In some cases, such as that of Italy, the army acts as a kind of rough national university in which the varied life of districts often discordant is fused into a patriotic whole, dialects are forgotten and a common language learned. In the case of France the new military system is a powerful engine of democracy. There is a French Prince (not of the blood) now serving in a squad of which the corporal is a young peasant from the same department. A few years ago I found the Duc de Luynes, who is also Duc de Chaulnes and Duc de Chevreuse, the owner of Dampierre, the personal friend of Kings, serving, by his own wish, for as the eldest son of a widow he was exempt, as a private of dragoons, and respectfully saluting young officers some of whom were his own tenants. The modern military system of the Continent, in the case of France and Germany, at least, may also, I think, be shown to have told in favor of peace. It is possible for us to occasionally demand a war with the greater freedom, because we do not, as a rule, know what war means. Those of us who have seen something of it with our own eyes are a very small minority. But every inhabitant of France and Germany has the reality of war brought home to him with the knowledge that those of his kin would furnish their tribute of "cannon flesh" (as the French and Germans call it) at the outbreak of any war; and the influence of the whole of the women of both countries is powerfully exerted in consequence on the side of peace.

CHARLES W. DILKE.

Paid Money to Publish Their Disputes.

From the Pall Mall Gazette.

It is all to the good that whatever controversy still remains with regard to the new century should be banished to the advertisement columns. Here are two from to-day's Times:

"TO THE ENGLISH PUBLIC AND THE PUBLIC ABROAD:

"A widespread haziness about the beginning of the century should be dispelled. A century is a series of one hundred consecutive years and must, therefore, begin with a year and end with a year. The Twentieth Century could not begin on the 1st of January, 1901, because the tenth decade ended with the 31st of December, 1899, and so terminated the Nineteenth Century. The 1st of January, 1900, inaugurated the Twentieth Century, and its first birthday will be on the first of next month, December 26, 1900."

"A widespread haziness about the beginning of a street should be dispelled. A street may be a series of one hundred houses, and must, therefore, begin with a house and end with a house. The twentieth house could not be No. 20, because the tenth house is No. 9, and so terminates the first decade. No. 0 is the first house, and the second house is No. 1.

"This advertisement is dated 28-12-00, which means the twenty-seventh day of the eleventh month of the ninety-ninth year of the century."

Could any greater evidence of national wealth be imagined than that two controversialists should in this way pay the price of their emotions?

THE LOVE OF COLOR.

MRS. OPIE, the widow of the great portrait painter whom some one has called the "inspired peasant," never, even in her old age, lost her love of bright colors. A little girl, Emma Martin, afterwards known in literature as Emma Marshall, visited her one day and experienced a rare pleasure. She says:

On a screen in her drawing-room were hung a number of prisms, which were suspended from chandeliers before the bell-shaped globes came into fashion. It sat on a stool at my mother's feet, wondering what those long bits of glass could mean. Presently the brilliant rays of the western sun filled the room.

"Now," said Mrs. Opie, "thou mayst run over to that screen and give it a shake."

I did as I was bidden. "Be gentle," said my mother in a warning voice, but I gave the screen a vigorous shake.

Emerald, ruby and violet rays danced on the walls and ceiling and delighted me so intensely that I kept repeating the process. Then my mother, afraid of mischief resulting, came and drew me back to her side. Mrs. Opie looked at me and said:

"If thou lovest bright colors, thee will never see anything more beautiful than the rainbow God sets in the sky."

THE SONGMAKER.

Where ha' ye been in the woods all day,
My son, now tell me truly?
I ha' been where fawns with the shadows play,
And the young bucks sport unruly.
Ha' ye shot no bolt in the chase, my son,
That ye come so empty-handed?
I ha' lain with the hare on the hills and won
Where the Hunters Grey are banded.

Ha' ye cut no stint in the woods to-day,
No faggot for winter firing?
I ha' slept on the beechen branches' sway
To the wood-doves' soft desiring.
I wot ye had given tryst with a lass,
Or met with some idle limmer!
I have seen where the Nut-brown Maidens pass
To bathe where the rushes shimmer.

(O well I see ye are witched this day
Forfend ye be not hag-ridden!)
I heard them laugh as they flew away
In the hazel thickets hidden.
I have learned the song that the Dancers sing
Treading their woodland measure;
I have heard the wee Folk's hammers ring,
Mining their golden treasure.

Had ye gotten a fairy love to-day
She had gi'en ye a pledge at gloaming;
Had ye brought one golden jewel away
Nor come so bare at homing.
Ye had something safe for the time of lack.
Think ye winter cometh never?
Nay, peace! From the forest I bring ye back
A song that shall live forever.

—Frances Bannerman in Leslie's Popular Monthly.